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PROCEEDINGS  
AT THE  
LAYING OF THE CORNER STONE  
OF THE  
ASTRONOMICAL OBSERVATORY  
OF THE  
COLLEGE OF NEW JERSEY,

JUNE 27, 1866.

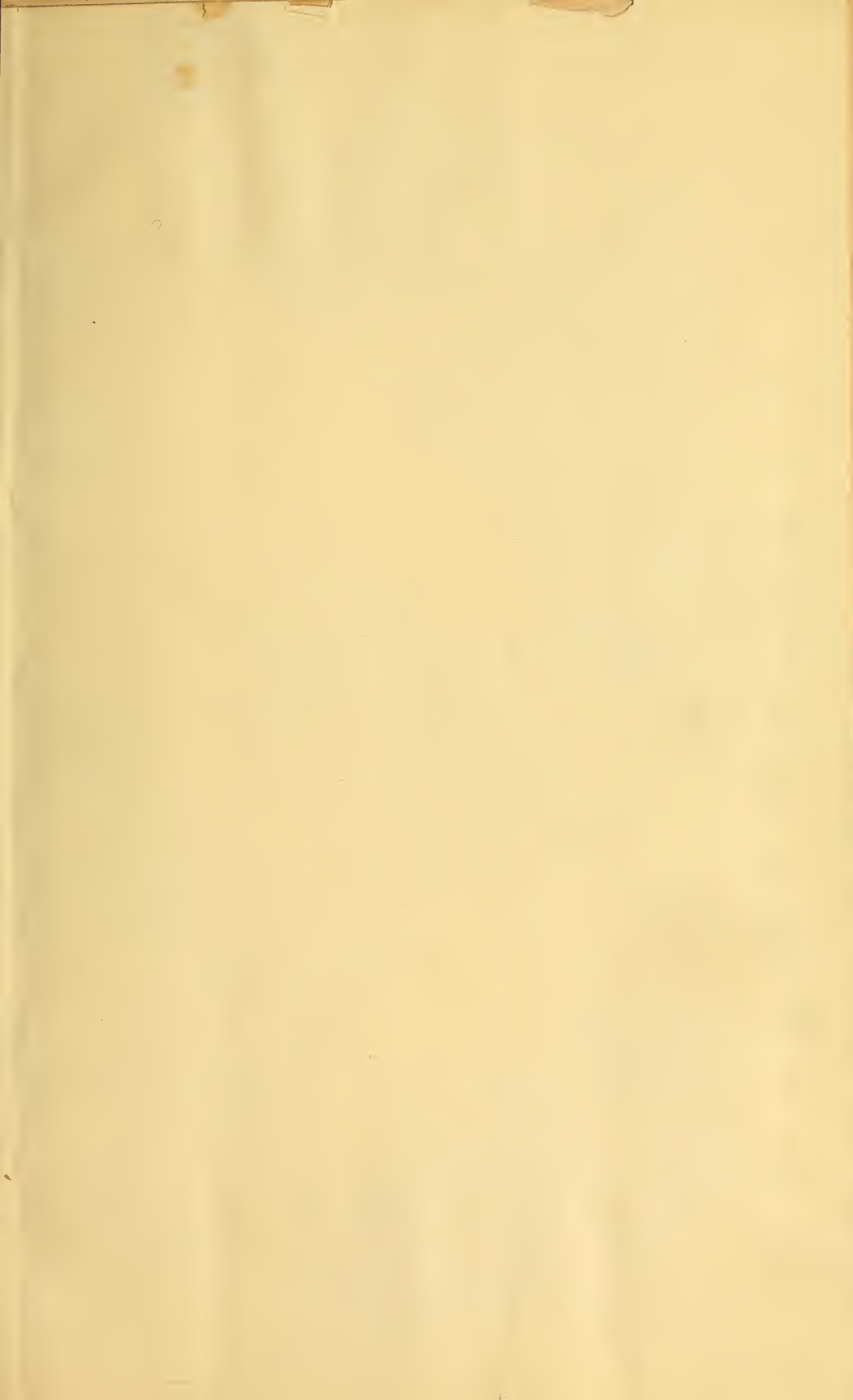
*With Address of Occasion*  
✓  
*Stephen Alexander.*

NEWARK, N. J.:

PRINTED AT THE DAILY ADVERTISER OFFICE.

1867.







A D D R E S S

BY

✓  
PROF. STEPHEN ALEXANDER, LL.D.,  
"

WITH AN

ACCOUNT OF THE SUBSEQUENT PROCEEDINGS

AT THE

LAYING OF THE CORNER STONE

OF THE

6  
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OF THE

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EXTRACT FROM THE MINUTES OF THE BOARD OF TRUSTEES OF THE COLLEGE  
OF NEW JERSEY, JUNE 27, 1866.

—:O:—

“*Resolved*, That Professor ALEXANDER be requested to furnish the Board with a copy of his Address at the Laying of the Corner Stone of the Observatory, to be published in connection with an account of the ceremonies connected with laying said corner stone.”

A true copy.

E. R. CRAVEN,

*Clerk of the Board.*





## · ADDRESS .

—:o:—

It has been well said of the ancient astronomical observations, that they required but eyes, attention, patience and time; and truly with the picture revealed to our view from the spot which we propose to occupy to-day, we need but the first two of these prerequisites, together with some sense of the beautiful, and a heart to feel grateful for the benediction, in its own way, which, under these circumstances, is implied in the very privilege of being able to *see*.

Now, the same wonderful emanation, or rather influence, which thus pours its glory over the landscape, *it* is also that which comes to us from the very boundaries of the visible creation; in the one case as in the other, that which makes “manifest is light.” And though poured upon that which is (in its own way) the most sensitive organ of the human body, with a velocity which accomplishes the equivalent to a two hundred and fifty days’ journey by steam in a single second—such is the exquisite adaptation of the one to the other that, in-

stead of our being blinded by the glorious influx, "truly the light is sweet, and a pleasant thing it is for the eyes to behold the sun"; and the exhibition of this beautifully simple and natural sentiment, seen through the vista of twenty-eight centuries, awakens a glad response in our feelings on such a day as this, when the mere privilege of sight is itself a benediction.

Yes, magnificently beautiful and a gladness to behold is the light, as, entering through the unbarred gates of the morning, it gilds with glory the drapery of the sky, reveals the grandeur of the distant mountain-top, and unveils, that it may adorn, the fair face of nature; beautiful even and exquisitely delicate, as it comes back, all blushing itself, because it has kissed the cheek of the blushing rose, or when it arrays the lily in its robe of spotless white without breaking its stem. Even its shreds and patches are beautiful, as they sparkle in the diamond or twinkle in the dew-drop, or when—with the very colours which tip the insect's wing—they paint, without breaking it, the merest bubble, or array in all the glories of the rainbow, the already half-broken and dispersed shower; but grand, even sublime, are the revelations of radiant light, when, availing ourselves of that noble present of Optics to Astronomy, the telescope—we become endowed with an exterior eye

of far-reaching and scrutinizing power, and, even awe-struck, behold the outer limits of all that is visible—limits so distant, that even light, which, as we have said, accomplishes a two hundred and fifty days' journey by steam in a single second—which, could we thus curb its motions, would girdle the earth seven times in less than the same brief interval—which actually rebounds to us from the moon in scarcely more than a second and a quarter—and which, springing from its home in the sun, visits the most distant of the planets and returns in less than a day; but which, though borne “on the very wings of the morning,” can reach us from those outer limits of which we speak, only after the lapse of centuries. Nay more, the conclusion can scarce be avoided that light from the limits of what the telescope reveals must have left them ere the race of man had a being—before God, in sublime self-counsel, said, “Let us make man”—“breathed into his nostrils the breath of life; and man became a living soul.” Fellow citizens, alumni, friends of science all, shall not a science be fostered which can unlock from amid the jewelry of creation the indications of a truth such as this.

We speak not, here and now, of its long concatenation of discoveries—of the grandeur of its field of research—of its widely-grasping and amply satis-

factory theory—of the improvement of kindred sciences which it has called for and effected—of its direct bearing on human intercourse. Why need we? when its magnificent illustrations have been woven into our very literature; through which they shine “like apples of gold in baskets of silver,” and when even they are made use of by the ordained expositors of that wonderful old-fashioned Book, whose emanations vibrate in exquisite symphony with all that is beautiful and grand in nature, not only in the direct enunciation, that “the heavens declare the glory of God,” but also in that exquisite figure, “the wings of the morning,” as well as in the sublime declaration, “He layeth the beams of His chambers in the waters, and spreadeth out the heavens as a curtain”—like a magnificent dome, a vast panóply o’er-arching sea and land, and studded with the glories of the far distant stars. Have we indeed so looked upon it ourselves, and thus comprehended the grandeur of the magnificent conception?

Nor has this simple but magnificent scripture figure lost any of its grandeur, but rather gained the more, now that we know that the gems that adorn that panóply are blazing suns. Yes, every step in the progress of discovery but tends to the confirmation of the truth that the stars are suns. How simple the enuncia-

tion conveyed in those four words. And yet what mean they? They make known that the tiny ray which gladdens our eye, as, shooting from some twinkling star, it trembles in the casement, is itself a miniature sunbeam; and the faint and feeble glow of starlight, which sometimes, like a semi-transparent veil, covers the fair face of nature, is woven of the scattered glory of thousands of suns. And it is because *that* is but *star-light* after all, that we are, more than by aught else, impressed with the idea of the stars' awful distance. Again we say, shall not a science be fostered which, aside from all else to commend it because of its applications, deals with truths and associations such as these?

And now that Artesian wells have been opened in the Great Desert—now, that Egypt is to be revived by European emigration—now, that Turkey is receiving not merely the polish of the West, but is also longing for the scriptures of truth—now, that the fragments of the mosaic of beautiful Italy are to be reunited—now that imperial Russia has surrounded and fortified the throne by municipal institutions—now, that an attempted revolution in China, though since stained with crime, is yet one which began with some recognition of Christianity, as though the power which is the “resurrection and the life” of

nations as well as of individuals, were at least dimly discerned—now, when China is in fact receiving international law from America—now, when a translation of the Scriptures by Americans is to bring back the gospel to the region from whence the gospel came—now, when India is indirectly as well as directly receiving a Christian influence through English literature—now, when, in the direct extension of the onward march of commercial and civil intercourse, the highway of the nations is to be opened across our own land, insular in its position, but continental in its proportions—now, when the West is lengthening its telegraphic communications to meet those of the East, and when the electric cord is just about to be again extended from the eastern continent to the western—now, when the regenerated Islands of the Great Ocean are themselves sending out the gospel westward from them until they again meet the east—now, when, as in prophetic vision, the winds were held so that, for a time, they should not blow on the earth, so have the powers of the old world been kept at peace, until He who had chastised us, had also, through ourselves, wrought out our great deliverance—now, when patriotism looks forward to the future which our fathers' God is opening before us with an interest so intense, that the feelings

which belong to it lie very near to the fountain of tears—now, when the adolescent human mind, like the individual mind of the youth of nineteen, gives abundant indications of what it is hereafter to do, and wherewith it is to work—now is pre-eminently the time when all that shall render possible and all that shall facilitate that work should be hastened and encouraged.

The Observatory about to be established in connexion with the College of New Jersey is the result of an agreement between its munificent living patron,\* and his late loved and honored friend and contributor to the same object.†

The plan fixed upon, proposes that the observatory be armed, for special research, with one of the best telescopes which art can furnish, with such other appliances as may be indispensable. No small portion of its funds was available a year ago, and the question may, therefore, well be asked, Why has it been permitted to be inactive? The very best answer to this is found in the fact that a portion of the income of the invested fund was, with the consent of the donor, applied in part payment of the expenses of an Expedition to observe the Annular Eclipse of October last, at a station 1200 miles distant.

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\* Gen. N. Norris Halsted.

† Rev. Cortlandt Van Rensselaer, D.D.

The Observatory Fund, then, has already been applied to its appropriate use. It has slept as sleeps the germinating grain, and I now hold in my hand a copy of what is, very probably, the first distinct photographic impression of an annular eclipse ever made.

Those who regard themselves as the stewards of God's gifts, and manifest the sincerity of this their faith by being their own executors, must pardon us if we allude to the lesson taught by their example, at least so far as to indicate our own appreciation of it --and, [*turning to Gen. Halsted*] therefore, assuming to be the mouthpiece of this whole assembly as well as of the friends of the College in general, I say, God bless you, sir. May it please him to prolong your valued life, and continue to make you a blessing in ways which we may not all specify here and now. Such, we are persuaded, is the object of your most earnest desire and effort. Who shall say that it is not a noble one!



## SUBSEQUENT PROCEEDINGS.

—:o:—

After the address in the church, the Trustees, Faculty and audience marched to the site on which the Observatory is to be built, preceded by the band. On arriving, Pres. Maclean addressed the audience, saying that all the operations of the Institution had been commenced in faith and prayer, and on this occasion the same course would be adhered to.

Prayer was then offered by Pres. Maclean, and the following verses of a hymn were sung by the College choir:

“ The spacious firmament on high,  
With all the blue ethereal sky,  
And spangled heavens, a shining frame,  
Their great Original proclaim.  
The unwearied sun from day to day,  
Does his Creator's power display,  
And publishes to every land,  
The work of an Almighty hand.

Soon as the evening shades prevail,  
The moon takes up the wondrous tale,  
And nightly to the listening earth,  
Repeats the story of her birth :

While all the stars which round her burn,  
 And all the planets in their turn,  
 Confirm the tidings as they roll  
 And spread the truth from pole to pole."

The corner stone was then laid by Gen. N. Norris Halsted, in Masonic form, in his capacity of Past Master of St. John's Lodge, Newark. The order was as follows :

1. The stone was lowered to its place, the band playing.

2. The plumb, level and square were then applied, and, found correct, the work was pronounced *well-formed, true and trusty*.

3. From the silver vessels corn, wine and oil were then poured on the stone, with these words: "May the great architect above bless the inhabitants of this place with all the necessaries, conveniences and comforts of this life; assist in the erection and completion of this building; protect the workmen against every accident, and long preserve this structure from decay; grant to us all a supply of the corn of nourishment, the wine of refreshment, and the oil of joy. May this structure be erected for the great advancement of Science and the glory of God.

4. The stone was then struck thrice with the gavel.

5. The working tools were next handed to the Superintendent, instructing him to use diligence and caution in superintending and directing this work.

6. Music and the Doxology,

Praise God from whom all blessings flow,  
 Praise Him all creatures here below,  
 Praise Him above ye heavenly host,  
 Praise Father, Son and Holy Ghost.

7. Benediction.

## APPENDIX.

In addition to what is to be found in the preceding Address, and the account of the subsequent proceedings at the laying of the corner-stone of the observatory, it may be well to indicate somewhat more particularly, what has throughout been kept in view both in the plan of the observatory, and the progress thus far in accordance with that plan.

As already indicated in the Address, the plan proposes the acquisition of one very large telescope—fully described by saying, that it is to be an achromatic refractor, mounted equatorially, and with the requisite appliances of micrometers &c., and clock-work movement.

Among the advantages of an instrument of this great size and perfection are :

1. Its vast light and power would enable the observer to trace features in clusters of stars and nebulae, which inferior instruments could not show : but which it might be very important to learn, in order to the more full understanding of the condition and possibly the motion of rotation, or otherwise, of such groups or individual masses.

2. To investigate, by such means, the periodic changes of the same. This has just now become a matter of grand interest.

3. To trace comets at a greater distance from the sun than inferior glasses could show them.

4. To scrutinize more accurately the constitution of the moon.

5. Perhaps, with some special fixtures, to ascertain the temperature of the moon's surface.

6. To observe, far better than can be done with an inferior instrument, the individual peculiarities of the several planets and of their satellites; including among these such peculiarities as the brightness around one pole, and then the other, of Mars, and the varied illumination of other parts of his surface—the obscure tint of the parts of Venus not in sunshine, and the various changes in the appearance of the part illuminated by the sun—all the peculiarities of the belts of Jupiter and Saturn—the special phenomena presented by Saturn's rings—the faint satellites of the two outer planets, &c., &c.

7. With a suitable arrangement, to photograph even small binary stars, and other celestial objects.

8. For the spectral analysis of the light of stars and that of other celestial objects; so that their actual composition may be determined.

9. For the better determination of the very curious phenomena attendant upon eclipses and the occultations of stars and planets.

10. For similar purposes, during the transits of the planets Mercury and Venus.

11. Another reason why a very large telescope is desirable, is itself a cumulative one. Everything in

the way of instruction in the science of Astronomy can be better accomplished by the Professor who is in possession of such an instrument as that here described.

These are among the reasons why the committee on the observatory are anxious to obtain an instrument of a very large size, with which an astronomer might pursue the investigation of *the specialties* which have been designated, or others not enumerated; and these could be studied by *one* observer, without the relay of assistants required for the execution of ordinary observatory work.

The committee, encouraged by the approbation of their plan by friends of the College of New Jersey, are even looking forward to the acquisition of as large an instrument as art can now safely be entrusted to produce. *Shall the committee be enabled to succeed?* Will such of the friends of the College as *can* make the answer to this question certainly an affirmative one, *at once* give it that character beyond a peradventure? The arrangements and all the construction of the observatory thus far, and all that is exhibited in the photograph of the appearance of the observatory when completed, all, presuppose that the answer to this question by the friends of the fourth college in age in this country, can be no other than an affirmative one; especially now that the cost of the observatory buildings has been provided for by one munificent donor, and there is the legacy of his friend to provide for some other indispensable appliances; so that the great telescope—the cost of

which will be some \$40,000—is what is yet to be provided for.

What the late Rev. Dr. Van Rensselaer's opinions with regard to the whole matter, and what his special designs and wishes were, may best be gathered from the subjoined extracts from the memorial presented by himself to the Board of Trustees of the College, but a short time before his death, and to which nothing need now be added.

## MEMORIAL.

*To the Trustees of the College of New Jersey:*

The undersigned memorialist, a member of your body, begs leave to state, that he was prepared to present the resolutions appended to this paper, to the Board of Trustees at its last meeting, but several of the most influential members being absent, and the time of meeting being short, he concluded to postpone it till the next meeting. He now finds himself on a bed of sickness and of approaching death. The subject, however, seems to him of so much importance, that he does not consider the solemn circumstances in which he is placed, inconsistent with the preparation of this memorial. The subject of it is THE ESTABLISHMENT OF AN OBSERVATORY IN CONNECTION WITH THE COLLEGE OF NEW JERSEY.

It may be useful to refresh the minds of the Trustees with a brief statement of the general benefits of an observatory to science.

I. All science is founded on observation: and astronomy, which is the grandest of the sciences, is entitled to the best sites and buildings. Private individuals cannot obtain, from the tops of houses, the desired advantages. Organized public effort is necessary.

II. The funds at the disposal of observatories af-

ford facilities for the purchase of instruments of much greater power, variety, range and precision, than could be accessible to private individuals.

III. In observatories *many* persons are employed to do the work otherwise assigned to one; thus acquiring for science the benefits of "division of labor," some of which are enumerated by writers on political economy as follows: (1.) Increased knowledge of particular parts assigned to each individual. (2.) Increased dexterity, both intellectual and physical, in the particular operations connected with the science. (3.) Distribution of the different processes, so that each shall be assigned to the person whose capacity is best fitted for it. (4.) The more accurate observations of the phenomena and laws of nature, and more scientific and exhaustive deductions from those observations.

IV. The observations and deductions of public observatories, being generally of greater accuracy and wider scope than those of private observers, have more authority in the world, and tend to establish the science on a more reliable foundation.

V. Intellectual men, lovers of the science, without whom progression would be impossible, are enabled by the payment of fixed salaries for their support, and are induced by the increased facilities for labor, and by a laudable ambition for scientific fame, to devote the whole of their time and talents to the work.

VI. Observatories educate young men for the science.

VII. Observatories facilitate communication be-



tween scientific men, by means of published documents, acquainting astronomers of one part of the earth, with the investigations and observations of those of another.

VIII. By their publicity, and practical utility, observatories draw the attention of the public to the science, thus paving the way for donations, legacies, &c., for its advancement.

These remarks are deemed sufficient to recall to the minds of the Trustees the importance, dignity and greatness of the work in which it is proposed to engage.

The question now arises, "Why an observatory should be established in connexion with the College of New Jersey?"

Will the Trustees bear with me in listening to some reasons for action on their part?

I. The ancient history of the College of New Jersey, the fame of its founders, and its present position among literary institutions, demand that it should do its share in exploring the works of God, and the wonders of the universe.

II. An observatory would advance the system of instruction in the institution, by uniting practice with theory, thus stimulating the minds of the students, both with the grand sights of the heavens, and with the majestic instruments which bring them to view.

III. The competition of other colleges, annually pressing more and more, requires the Trustees of this college to keep progress with the age. If the

objection be made that there are observatories enough, the reply is that there can *never* be enough, whilst there is none at *the College of New Jersey*.

IV. Princeton being a central position in the State, and on the highest ground between New York and Philadelphia, affords one of the finest situations in the land for the establishment of an observatory.

V. The college possesses, in one of its professors, the rarest gifts for taking charge of an observatory. A man whose powers of observation are so acute, of generalization so extended, of deduction so logical, that the observatory of this college might soon become the very chief in the country.

VI. There is money in abundance among the friends of the College of New Jersey to secure the proposed undertaking. Enlarged plans always secure enlarged resources. The cry of the timid, "Where shall we get money?" always leads to poverty and failure. Enterprize and energy rightly directed, never fail of success.

\* \* \* \* \*

With these statements, your memorialist submits the subject to the Board, humbly praying that they may be divinely directed to take such action as will best promote the interests of the College and the glory of God.

I am, gentlemen,

Yours most respectfully,

CORTLANDT VAN RENSSELAER.

By PHILIP L. V. R.

BURLINGTON, N. J., *June 25th*, 1860.

## [POSTSCRIPT.]

The memorialist, if he had been present at your meeting, would have offered the following resolutions to bring the matter to some practical test. He now appends them to the memorial, and hopes that some member of the Board may offer either these resolutions or others suited to the same purpose.

1. *Resolved*, That this Board of Trustees deem it expedient to establish a first class observatory, in connexion with the College of New Jersey.

2. *Resolved*, That a committee, consisting of the President of the College, Professor Stephen Alexander, Dr. Hodge, Professor Atwater and Dr. Pennington, be authorized to prepare plans; to propose a location; and to draw up rules and regulations for the organization of the observatory; and they are hereby instructed to report on these points at the next meeting of the Board.

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\* \* \* These resolutions were adopted by the Board of Trustees; Ex-Governor Olden, General N. Norris Halsted and Professor John S. Schanck have been added to the committee; the reports of the committee, as directed by the second resolution, have been, from time to time, submitted to the Board: and the construction of the observatory is progressing under the Committee's superintendence and control.





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